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Application No. 10/714,858
Amendment dated July 3, 2007
First Preliminary Amendment

Docket No.: 4444-0275PUS1

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for forming an opto-electronic device, comprising:

providing a substrate and an opto-electronic layer thereon, wherein said substrate is a transparent substrate, and said transparent substrate is a member selected from the group consisting of glass, silicon, epoxy resin, poly methyl methacrylate, acrylonitrile butadiene styrene copolymer resin, polymethyl methacrylate, sapphire, polysulfones, polyethersulfones, polyetherimides, polyimides, polyamide-imide, polyphenylene sulfide and silicon-carbon thermosets; and

forming an electric conductive element on said opto-electronic layer; and

forming an ohmic contact between said electric conductive element and said opto-electronic layer at a temperature lower than 250 degrees centigrade.

2. (Cancelled)

3. (Original) The method according to claim 1, wherein said ohmic contact is formed at the temperature being lower than 200 degrees centigrade.

4. (Original) The method according to claim 1, wherein said ohmic contact is formed at the temperature being higher than 100 degrees centigrade and lower than 175 degrees centigrade.

Application No. 10/714,858
Amendment dated July 3, 2007
First Preliminary Amendment

Docket No.: 4444-0275PUS1

5. (Original) The method according to claim 1, wherein said ohmic contact between said electric conductive element and said opto-electronic layer is formed through a solid state growth process.

6. (Currently Amended) The method according to claim 1, wherein ~~said step for forming said electric conductive element forms said electric conductive element~~ is a material selected from the group consisting of ~~by selecting the material from the group consisted of~~ Ni, Pd, Ge, Si, Se, Au, Ag, Pt, AuAg, AgPt, AuPt and AuAgPt.

7. (Currently Amended) The method according to claim 1, wherein ~~said step for forming said electric conductive element forms said electric conductive element~~ is a material selected from the group consisting of ~~by selecting the material from the group consisted of~~ Ni, Pd, Zn, Be, Mg, Cd, Au, Ag, Pt, AuAg, AgPt, AuPt and AuAgPt.

8. (Currently Amended) The method according to claim 1, wherein said step for providing said opto-electronic layer on said opto-electronic layer comprises forming ~~to form~~ a plurality of semiconductor layers on said opto-electronic layer.

9. (Currently Amended) The method according to claim 8, further comprising forming said electric conductive element on a n-type doped semiconductor layer of said opto-electronic layer, wherein said electric conductive element is selected from the group consisting ~~consisted of~~ Ni, Pd, Ge, Si, Se, Au, Ag, Pt, AuAg, AgPt, AuPt and AuAgPt.

Application No. 10/714,858
Amendment dated July 3, 2007
First Preliminary Amendment

Docket No.: 4444-0275PUS1

10. (Currently Amended) The method according to claim 8, further comprising forming said electric conductive element on a p-type doped semiconductor layer of said opto-electronic layer, wherein said electric conductive element is selected from the group consisting ~~consisted~~ of Ni, Pd, Zn, Be, Mg, Cd, Au, Ag, Pt, AuAg, AgPt, AuPt and AuAgPt.

11. (Original) The method according to claim 1, wherein said electric conductive element comprises a plurality of electrodes.

12. (Original) The method according to claim 10, wherein said step for providing said substrate and said opto-electronic layer thereon comprises:

- forming a first semiconductor layer on said substrate;
- forming an active layer onto said first semiconductor layer; and
- forming a second semiconductor layer onto said active layer.

13. (Currently Amended) The method according to claim 12, wherein said step for forming said electric conductive element comprising:

- removing portions of said first semiconductor layer and said active layer to expose portions of said second semiconductor layer; and
- forming said electric conductive element on said first semiconductor layer and said exposed second semiconductor layer.

Application No. 10/714,858
Amendment dated July 3, 2007
First Preliminary Amendment

Docket No.: 4444-0275PUS1

14. (Currently Amended) The method according to claim 13, wherein said first semiconductor is comprising to form a n-type doped semiconductor layer to be said first semiconductor layer.

15. (Currently Amended) The method according to claim 13, wherein said first semiconductor is comprising to form a p-type doped semiconductor layer to be said first semiconductor layer.

16. (Currently Amended) The method according to claim 15 13, wherein said second semiconductor layer is comprising to form a n-type doped semiconductor layer to be said second semiconductor layer.

17. (Currently Amended) The method according to claim 14 13, wherein said second semiconductor layer is comprising to form a p-type doped semiconductor layer to be said second semiconductor layer.

18-20. (Cancelled)

21. (Currently Amended) The method according to claim 1 18, wherein said step for forming said electric conductive element is a material selected from the group consisting of forms said electric conductive element by selecting the material from the group consisted of Ni, Pd, Ge, Si, Se, Au, Ag, Pt, AuAg, AgPt, AuPt and AuAgPt.

Application No. 10/714,858
Amendment dated July 3, 2007
First Preliminary Amendment

Docket No.: 4444-0275PUS1

22. (Currently Amended) The method according to claim 18, wherein ~~said step for forming said electric conductive element forms~~ said electric conductive element is a material selected from the group consisting of ~~by selecting the material from the group consisted of~~ Ni, Pd, Zn, Be, Mg, Cd, Au, Ag, Pt, AuAg, AgPt, AuPt and AuAgPt.

23. (Cancelled)

24. (Currently Amended) The method according to claim 18, wherein said step for providing said substrate comprises adhereing to ~~adhere~~ said opto-electronic layer on said transparent substrate by an adhesive layer.

25. (Currently Amended) The method according to claim 24, wherein ~~said step for adhering said opto-electronic layer on said transparent substrate by said adhesive layer~~ is a member selected the material from the group consisting ~~consisted~~ of epoxy resin, acrylonitrile butadiene styrene copolymer resin and polymethyl methacrylate.

26. (Currently Amended) The method according to claim 24, wherein ~~said step for adhering said opto-electronic layer on said transparent substrate by said adhesive layer~~ is a material selected the material from the group consisting ~~consisted~~ of polysulfones, polyethersulfones, polyetherimides, polyimides, polyamide-imide, polyphenylene sulfide and silicon-carbon thermosets.

Application No. 10/714,858
Amendment dated July 3, 2007
First Preliminary Amendment

Docket No.: 4444-0275PUS1

27. (Original) A solar cell comprising an opto-electronic device formed by a method for forming an opto-electronic device according to claim 1.

28. (Original) A light sensor comprising an opto-electronic device formed by a method for forming an opto-electronic device according to claim 1.

29. (Currently Amended) A method for forming an opto-electronic device, comprising:
providing a substrate, wherein said substrate is a transparent substrate, and said transparent substrate is a member selected from the group consisting of glass, silicon, epoxy resin, poly methyl methacrylate, acrylonitrile butadiene styrene copolymer resin, polymethyl methacrylate, sapphire, polysulfones, polyethersulfones, polyetherimides, polyimides, polyamide-imide, polyphenylene sulfide and silicon-carbon thermosets ;

forming an opto-electronic layer on said substrate;
forming a transparent substrate on said opto-electronic layer and removing said substrate;
forming an electric conductive element on said opto-electronic layer; and
forming an ohmic contact between said electric conductive element and said opto-electronic layer at a temperature lower than 250 degrees centigrade.

30. (Currently Amended) The method according to claim 29, wherein said ohmic contact between said electric conductive element and said opto-electronic layer is formed by through-a solid state growth process.

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FAX NO.

P. 13

Application No. 10/714,858
Amendment dated July 3, 2007
First Preliminary Amendment

Docket No.: 4444-0275PUS1

31. (Currently Amended) The method according to claim 29, wherein said ohmic contact is formed at a the temperature being lower than 200 degrees centigrade.

32. (Currently Amended) The method according to claim 29, wherein said ohmic contact is formed at a the temperature being higher than 100 degrees centigrade and lower than 175 degrees centigrade.

33. (Currently Amended) The method according to claim 29, wherein ~~said step for forming said electric conductive element forms said~~ electric conductive element is a material selected from the group consisting of ~~by selecting the material from the group consisted of~~ Ni, Pd, Ge, Si, Se, Zn, Be, Mg, Cd, Au, Ag, Pt, AuAg, AgPt, AuPt and AuAgPt.